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A KNOT OF BLUE RIBBON.

In the year 1864 I was manager of the Willoughby branch of the Metropolitan Bank of Sydney, New South Wales. Willoughby is a country town containing some five thousand inhabitants, situated on the river Hunter. It lies in a long valley, through the middle of which the river flows, for the greater part of its course, between low grassy banks. The staff of our branch comprised myself and three others. The accountant and myself lived together in a suite of rooms adjoining the bank premises. We were very good friends, and had everything in the house in common, though, if we had chosen, we might have lived as much apart as if we had occupied separate houses. Dick Weir was indeed an easy companion to get on with. It was a little time before you came to know him, for he was of a shy and diffident nature, who made friends slowly; but when you did get to be familiar with him, you liked him without exactly knowing why. He was not brilliant, or specially gifted in any way, though he understood his own business thoroughly, and performed its duties skilfully and well. In personal appearance he was not what, at first sight, you would probably call attractive. He had plain, strongly marked features, and an ungraceful, loose figure, which under no circumstances could be made to do credit to his tailor. I don't think there was a continuous line of beauty in his whole figure from top to toe. His eyes were good, however, clear, steady, gray eyes. But as nearly always happens when you come to be friends with a man or woman, you soon grew accustomed to Weir's outward appearance, failed to see its homeliness, and liked the man for himself, for his simple, genuine, and sound-hearted nature. At least this was my case.

Willoughby is a sociable little place, and Weir and myself had a considerable circle of acquaintances in it. The family whose house we most frequently visited was that of Mr Blaxland. John Blaxland was a retired gentleman of property, a hearty, kindly, hospitable man. His house was

pleasantly situated on the bank of the river, and distant about three miles from the town. Mr Blaxland was a married man with two children, a son and daughter. The latter, at the time of which I write, was in her twentieth year, and one of the prettiest girls in the country-side. Ella Blaxland was a good girl too, warm-hearted, frank, and affectionate, willing to please and be pleased on all occasions, a little coquettish sometimes, and fond of fun, but neither vain nor frivolous.

Weir and I were at Wyandra—such was the name of Mr Blaxland's place—sometimes as often as twice a week, and we were always sure of a kindly, unceremonious welcome. No one understood better how to entertain their friends than John Blaxland and his wife, and this without seeming to make much effort in so doing.

As may be supposed, Ella Blaxland had many admirers, but for a long time no one of these seemed to find especial favour in her sight. Nothing could ever be detected in her manner whereby you could gather that she regarded one with more friendliness than another. When such signs did appear, as they did at last, it was in favour of a comparative stranger in the district, one who had but lately come amongst us. This was a matter of no small chagrin to some of Ella's old admirers; but certainly the new-comer had many of the personal qualities such as frequently recommend a man in ladies' eyes. Leonard Hamerton had established himself as a solicitor in Willoughby. Previous to his coming to the district, he had been for a number of years in a well-known solicitor's firm in Sydney, and brought with him letters of introduction to most of the better-class families in the town. Mr Hamerton was a tall, well-made, rather slight man, with fine brown hair and eyes, and a fresh colour. He had a ready, fluent address, helped by a melodious voice; and his manners were easy, assured, and perfectly well bred. He possessed accomplishments, too, which, if not of a deep, were of an eminently useful and effective kind, such as win favour in average society. He could sing, and perform on the piano with taste and skill, knew

whist and most other games at cards thoroughly, played croquet with dexterous grace, and handled a billiard cue in a manner that rather astonished some of our young fellows who thought they knew something in that way. Hamerton was a prudent man. He knew exactly the limits of his own strength, and never attempted anything beyond his range. His country rivals were never successful in tempting him into any of the sports in which they believed themselves to be stronger. He had decided objections to being seen at a disadvantage.

Soon after his arrival in Willoughby, Hamerton became a frequent visitor at Wyandra, and it was not long before his name was mentioned as that of Miss Blaxland's favourite suitor. At first, I regarded this as an idle rumour. Other young men had at different times earned this distinction, and each had in turn quietly lost it. But by-and-by, both Dick Weir and myself thought we saw signs that the popular rumour was at last about to be verified. Ella Blaxland seemed to be regarding Leonard Hamerton with a favour greater than that which she extended to others. This was not very marked; but to us, who were so frequently about the house, it became sufficiently so to be hardly mistakable. I didn't like it myself, for no reasons of a personal kind, for I had never looked upon Ella Blaxland in any other light than that of a friend, and my warmer affections were directed elsewhere, but simply because I didn't much care for Hamerton. I had reason to believe, though he said little about it, that the sentiments with which I regarded him were shared in a great measure by Dick Weir.

It was about two months after Hamerton had come to Willoughby, that a little *fête* was held at Wyandra in honour of Ella's twentieth birthday. It was intentionally a quiet little festival, and those who met to celebrate it were none but the more intimate friends of the family. But we were a very merry and pleasant party. We met early in the afternoon of a lovely day in the end of April, which, it may be necessary to remind English readers, is the Australian autumn. I remember the day by reason of a slight circumstance of which I alone was witness, a circumstance which was a revelation to me at the time, and which afterwards recalled to my memory with added significance. During the afternoon, the larger portion of our party were engaged in croquet, while some wandered about the garden talking and idling away the bright hours. Ella Blaxland was looking especially bright and charming; gay, animated, and happy, as befitted the occasion. She was dressed simply, in some soft, light, airy material, with bits of delicate blue ribbon here and there about her person, and a loop of the same interwoven amid her hair. There were other girls present with undeniable claims to beauty, but Ella moved among them like a little princess, though with no air of conscious superiority. Leonard Hamerton was at his best too to-day, exerting his utmost powers of pleasing. Sparkling, witty, and carelessly gay, he infused mirth into all our diversions, and was confessed, by some tacitly, by others openly, to be the life and spirit of our party.

We were just bringing our croquet contest to a close, preparatory to adjourning indoors for tea, when Miss Blaxland discovered that she had lost one of the ribbons with which the sleeves of her dress were fastened at the wrist. Search was made

by all of us over the croquet-ground, but in vain. It was very strange where the bright knot of ribbon could have hidden itself on that smooth level sward, and we were all sure that Ella had had both her wrist ribbons on when we began our game. Then I suddenly recollected that I had seen Dick Weir, who had not taken part in the game, but had been acting as umpire to us, stoop once while we were playing, and pick up something from the ground, which he hastily placed in the breast-pocket of his coat. I merely thought at the time that it was something of his own which he had dropped, but now it occurred to me with convincing force that it was nothing else than Ella's ribbon which he had picked up. That explained the haste with which he had hidden it away. A minute or two before Ella had missed it, Dick, his services being no longer required by us, had strolled away in the direction of the house. I said nothing, for I was resolved to keep my friend's secret. What I had seen, now put things in a new light. 'So,' I thought, 'is that how the land lies?' Poor Dick; I felt genuinely sorry for him. If he had any hope of ever winning Ella Blaxland's affections, I felt he was doomed to disappointment. But surely he knew this himself by this time.

That evening, as Dick and I rode home together from Wyandra in the moonlight, I said: 'Looks as if it were a settled thing between Ella and Hamerton, don't you think?'

Dick looked round at me, and I saw that his face was very grave, and I thought somewhat pale, but that might have been the moonlight. 'Do you think it's really settled?' he said. 'Well, we both wish her all happiness, don't we?'

There had always been the most friendly intimacy between Weir and Miss Blaxland, but nothing more than I had ever discovered. Dick's name had never been one of those even mentioned among the aspirants to Ella's hand, though they had known each other from childhood, both being natives of Willoughby.

It came to be a matter of general belief in Willoughby that Leonard Hamerton was to marry Ella Blaxland, though nothing definite upon this point could be traced back to Wyandra. Meanwhile, my liking for Hamerton did not increase, and I could not view him as a worthy husband for Miss Blaxland. The strong friendship I had formed for the pretty, kind-hearted girl made me desirous of seeing her marry a man who would be worthy of her, and Hamerton did not impress me with this idea. I felt that this might be in a great measure prejudice, but some of Hamerton's habits of life did not appear specially laudable. Weir and I found him a frequent night visitor of the billiard-room of the *Willoughby Arms*, and this not with the merely innocent object of enjoying a game. He never seemed to care for playing unless for money stakes, and he was always prepared to play as high as his opponents would go. He almost invariably won; and when he did not, it struck me that he had his own reasons for it. In fact, he did much what he liked with such opponents as he met at the *Willoughby Arms*, though they were slow to see it; and his fine talent for the game no doubt brought him in a comfortable little addition to his income. He employed his knowledge of cards whenever opportunity offered, with the same results.

The winter of 1864 is still remembered in New South Wales as that in which one of the largest floods that the colony has ever been subjected to, occurred. The Hunter River district suffered especially, and we in Willoughby did not escape the general destruction. The rapidity with which a flood occurs in Australia is not readily realised by people in the home-country. The rain began to fall in Willoughby at noon of one day, and by dusk of the next the river had risen thirty feet. By next morning half the town was submerged, the water completely covering the ground-floor of many of the houses. Our bank premises stood comparatively high, but we were obliged to abandon the first-floor on the second morning of the flood. Boats were being employed all that day in conveying the inhabitants from the lower parts of the town, and the houses immediately contiguous to the river, to those situated on more elevated ground farther back from the stream. Of course, at such a time all business is at an end. Every one who could be of any service employed himself in manning the boats for the rescue of the flooded-out families. Weir and I had been hard at work all day with the boats, and were resting from our exertions, in our little sitting-room after our six o'clock dinner. We were both pretty tired, and did not propose doing anything more that night unless some urgent demand were made upon us. As we sat smoking in silence, Weir said suddenly: 'By-the-bye, did it ever occur to you how the Wyandra people may be getting on?'

'No,' I answered, somewhat slowly; 'it never struck me; but I suppose they're all right; they don't lie very low, and they've the boats.'

'They don't lie very high,' replied Dick, rising to his feet, and standing with his back to the fire; 'and as to the boats, if they have to take to them, who's to man them? You know Mr Blaxland never pulls, and the two gardeners are, I should think, poor enough hands at it. There's a good lot of women-folk about the place, and very few men at this time of the year—none, in fact, I expect, except the gardeners and a boy. By Jove! Jack, we should have thought of this before. But there's no time to be lost. We must find a boat, and get up to Wyandra to-night. Are you game for it, old man? Don't go, if you don't feel up to it. I shall easily be able to pick up a crew at the *Willoughby Arms*.'

'I'm quite ready, Dick,' I answered. 'You're right; we should have thought of it before.'

We got four men at the hotel, whom we knew to be all sturdy pullers, and a boat.

Wyandra lay up the river, and in making for it, we followed the course of the stream. Had it been in the daytime, we might have saved something by taking a cross-cut, but there was not sufficient light to make such a course now judicious. It was still raining in torrents from the heavy, low-hung heavens, that seemed to be slowly settling down lower and lower upon the earth. The current of the swollen river was very strong, rendering pulling extremely difficult. We were the best part of an hour in reaching Wyandra. Rowing across what was a day or two ago a smiling garden, we approached the house from the front, and found the ground-floor completely submerged. There was an ominous silence about the place, and it was with no slight feelings of misgiving that Weir

and I climbed from the boat through the windows of the second-floor, and entered the house. We found the whole household gathered together in one room: Mr and Mrs Blaxland, and their daughter, three women domestics, the two men-servants, and the boy. They were seated with white faces and cowering forms around the dying embers of a wood-fire, and the whole group presented a very pitiable sight. As we entered the room, John Blaxland started to his feet, and when he recognised us, grasped the hands of both of us with convulsive energy.

'My dear boys,' he cried, 'you are just in time; half an hour more, and the water will be knee-deep in this room! All our fuel is useless too, and we have been half-famished with cold.'

'Dear me, Mr Blaxland,' I said, 'we never imagined you would have been in such a plight; but it was very thoughtless of us. Didn't you think of trying to get away in the boats at first?'

'We put off till it was too late. The two skiffs are such light things, you know, and none of us understood much about the management of boats. We didn't fancy trusting ourselves to them, that's the truth.'

'Well, we mustn't put off time now, sir,' I said.

Dick had been meanwhile doing his best to reassure Mrs Blaxland and her daughter, the former of whom was in a state of extreme nervousness, which the poor lady was in vain exerting herself to control. We got together such shawls and rugs as were in the house and still untouched by the water, and wrapping them about Mrs Blaxland, Ella, and the other three women, made them as comfortable as the circumstances admitted, in the stern of the boat. When all the male portion of the party were seated, and the rowers had taken their places, we found that the boat was already full. One other person it might hold, but not possibly more. Here was a difficulty we had not contemplated. We had taken the largest boat we could get at Willoughby. What was to be done? Weir was prompt with a remedy. He took me aside a moment.

'There is only one thing for it, Jack,' he said; 'I must stay behind.'

'Not while I go,' I replied.

'Now, Jack,' said my companion in a quiet but decided voice, 'listen to reason. It's simply a matter of necessity. There are not two sides to it. Both of us can't go, and one of us must. You must, for you are the best steerer, and it will need all your skill in getting safely back with that heavily laden boat, and through such a sea of waters. I know you would do what I am doing, but you see I must be the one that stays behind in this case. The lives of all in that boat depend upon your going.'

I saw the stern force of what he said. It was imperative that I should go, and it seemed impossible that Dick should go too.

'Well, Dick,' I said, 'I see it must be so. Heaven grant that we may be able to come back for you in time. You will have to take to the roof, I expect; but if you can manage to hold out against the cold, all will be well; I shall get some fresh men at the hotel.'

'All right, old fellow,' said Dick, hurrying me into the boat; 'I shall be all right; don't fear. Just give me your tobacco-pouch, will you? I'll keep life in me till you return. You've got the

brandy-flask, I think, but perhaps you'll need it for some of the women.' He was wonderfully calm and cool.

'No, no,' I said, handing him the flask; 'you'll want it a great deal more than any of them.' I took my seat in the stern of the boat.

'O Mr Weir,' cried Miss Blaxland from her place, 'can you not go with us? Surely we can make room for one more.'

'No, no, Miss Blaxland,' replied Weir. 'The boat is already fuller than is safe. I shall be all right till Jack returns. Push off, men.'

The boat lurched forward into the tumbling sea of waters. I looked back at Dick, and for a moment saw his pale, calm, resolute face watching us from the window; in the next, it was swallowed up in the enshrouding darkness.

The current of the river was now with us, and our progress was more rapid than it had previously been. But our course was more dangerous, from the turbulent violence with which the current was flowing, and from the heavily laden condition of the boat. Steering was extremely difficult, and it was only with the greatest effort that I could keep the head of the boat straight. For that night at least, the only place in which my living freight could be accommodated was our rooms at the bank, and as soon as I had seen Mr and Mrs Blaxland, Ella, and the rest as comfortably provided for as possible, I set off again in the boat for the *Willoughby Arms*. Of my four rowers, one consented to return with me; the other three, though they would have been willing to go with me, declared themselves unable for the work. At the hotel, by offering a sufficient money inducement, I was enabled to obtain three other men.

Back over the dark eddying flood we made our slow way. The rain was falling, if possible, in heavier torrents, and the night had grown thicker. Stormy masses of cloud swept slowly across the lowering heavens, looking as though they might at any moment descend bodily, and overwhelm us in black destruction. It was with a heart beating with anxiety that I sat straining my eyes out into the darkness, as we approached the house at Wyandra. The water had risen high above the windows of the second-floor, and was level with the roof—more than level, the turbid-coloured tide was lapping over the low stone parapet in front. I climbed up upon the roof; I knew that Dick must have been driven from the interior of the house long since. In a stooping position, more often than not on my hands and feet, I groped my way in the rain and the darkness along the sloping shingle roof. For some time I was unable to discover any sign of Weir; I called his name, again and again, but there was no answer. A dread came upon me, that, wearied out as he was by the long and unwonted exertions of the day, he had been overcome by exhaustion, and swept away by the remorseless waters. At last, when hope was fast sinking within me, I stumbled, and tripped against something lying at my feet. I stooped, and found Weir lying with his back propped against one of the chimneys of the house. I lifted him in my arms, and made my way as fast as possible to the boat. Dick was quite insensible, and very cold. I wrapped him in a large rug which I had brought with me, and which had kept tolerably dry in the locker of the boat, poured some brandy into his throat, and

began chafing his hands. For some minutes he shewed no signs of returning animation, and I thought all was over with him. But in a little his lips moved nervously, his eyes opened and immediately closed, and he seemed to go off again as it were in a swoon. Reassured, however, that he was still alive, I bade the men push off, and wrapping the rug closer about the rigid form of my friend, I placed him at my feet, at the bottom of the boat, where I could watch him as I steered. Again we were in the current of the river; the night had grown still darker, and by straining my sight to the utmost, I could see no farther than half-a-dozen yards beyond the boat's head. The current was rushing at headlong speed, and with a deafening roar like the crash of a vast waterfall. The men were using their oars more to steady the boat than to propel her, while we were borne along with an uneasy lurching motion on the swollen, eddying waters. Every few moments a dark object drifted past us—now a dead horse or cow, now a barrel, a ladder, or a hen-coop, waifs from many a ruined homestead. Once a haystack struck the boat sideways, wheeled us round, and all but overwhelmed us in the surging flood. From time to time I bent over Weir and applied the spirit-flask to his lips. It was all that I could do, for I had to give my undivided attention to the work of steering. When we reached the town, the men were all but exhausted. Like the rest, they had been working with the boats all day. One of the three doctors in Willoughby lived close to the bank, and I bade the men stop for a moment at his house. When he heard my story, the doctor immediately accompanied me home.

We laid Dick in his bed. Besides the doctor and myself, Mr and Mrs Blaxland and their daughter were the only others in the room.

With anxious faces we bent over the bed as the doctor proceeded to examine the still insensible form of Weir. He laid open Dick's waistcoat, tore aside his shirt, and placed his hand on his heart. As he did so, something fell out from between the folds of the woollen shirt, and lay on Dick's breast. It was a small knot of blue ribbon. I picked it up and handed it to Ella Blaxland. As she took it, her face, that had been marble-pale before, changed to crimson; a strange, startled look came into her eyes, and she turned hastily from the bedside, and seated herself by the fire. She too recognised the ribbon.

A few moments' examination satisfied the doctor that Dick was still alive, and we proceeded to apply such remedies for his restoration as were within our power. These proved more quickly successful than I had hoped for, and soon we had the satisfaction of seeing Dick slowly returning to consciousness and life. Before the doctor left, he had fallen into a sound sleep.

When he awoke next morning, Dick was completely himself again. When the doctor called and saw him, he pronounced that no grave results had ensued from the previous night's exposure.

On the day succeeding that of the events above narrated, the rain ceased, and the waters receded from the earth almost as quickly as they had risen. But what a scene of desolation they left behind! Far as the eye could reach, the land that a few days before had been green and smiling, lay a dreary waste of wilderness—farms and homesteads, gardens, orchards, and vineyards,

stripped bare by the cruel waters, and left a shapeless ruin. But on these things, familiar enough to many a colonist, it is not my intention here to dwell. It was some time, of course, before the pleasant homestead at Wyandra regained its old shape and beauty; but the Australian soil and climate have quick recuperative powers, and Mr Blaxland's property was restored to its former appearance with a rapidity that would have astonished a stranger in the country.

Leonard Hamerton did not marry Ella Blaxland. It turned out that there had never been any mention of an engagement, either on the part of themselves or Ella's parents—though I have reason to think that Miss Blaxland at one time was really very favourably inclined to Hamerton. But circumstances occurred to change her feelings completely in this respect. Shortly after the great flood, Hamerton disappeared suddenly from Willoughby under somewhat inexplicable circumstances. After his departure, stories got about very little to his credit, chiefly relating to pecuniary matters. There was a good deal of mystery about the whole affair; and it was thought that the young man's friends in Sydney had used their strongest influence to hush the matter up. Enough, however, got abroad to render Hamerton's further stay in Willoughby impossible. He consequently sought a larger field in a neighbouring colony, where he might, if he chose, start afresh, and reform certain of his habits of life.

The place in Ella Blaxland's regard that had been supposed by everybody to have been occupied by Hamerton, was quietly taken by one of a very different stamp, Dick Weir. Of course, everybody was surprised when it came to be known for certain that Weir was to marry Miss Blaxland. It was hardly conceivable! The very last person that any one would have thought of! But so it was. The small world of Willoughby was not behind the scenes, and perhaps its surprise was not very wonderful in this case. Dick did not at once strike you as the kind of man likely to carry off the prettiest girl in a country-side.

JONATHAN HULLS.

IN the autobiography of the late John Barrow, under-secretary of the Admiralty, the following assertion occurs: 'That neither Lord Stanhope, nor Fulton, nor the American Livingstone, nor Patrick Miller, nor his assistant Symington, have the least claim of priority to the application of steam and wheels for propelling vessels. There can be no doubt that Jonathan Hulls was the real inventor of the steam-boat.' This is a bold and dogmatic assertion of Barrow, and would need some investigation. Let us first understand who was Jonathan Hulls, and when did he live.

According to the tradition current in the neighbourhood in which he was born, Hulls was the son of a village mechanic at Hanging-Aston, near Campden, Gloucestershire; the name of the child being entered in a baptismal register, December 17, 1699. Thomas Hull, or Hulls, the father, having removed from Aston to Campden, there the boy was educated at the ancient grammar-school. With a natural turn for mechanics, Jonathan Hulls was brought up as a clockmaker, or rather clock-mender—one of a humble class of artisans whose business it is to make a circuit through a certain

district, cleaning and repairing cottage and farmhouse clocks, as well as the clocks of churches. He married early, and settled in the hamlet of Broad Campden, about 1729.

During the earlier years of manhood, Hulls bore the reputation of being a thoughtful and studious man, and his neighbours are said to have regarded his superior mental powers with no small degree of respect. It is asserted that that idea which has given him some claim to posthumous honour occurred to him while he was yet young, and was matured in his own mind long before any channel was opened through which he could hope to make it known to the world; for Hulls had a family to support, and no means beyond a poor and precarious handicraft. A patron at last appeared in a Mr Freeman of Batsford Park, whose seat (now that of Lord Redesdale) is situated about a mile from Aston, the native place of the inventor. By means of funds provided by this gentleman, Hulls was enabled to go to London, to procure a patent, and to publish a pamphlet in which his invention is described.

His patent is dated December 21, 1736, and it bears the sign-manual of Queen Caroline as witness. In this instrument the invention is described as a 'machine for carrying ships and vessels out of or into any harbour or river against wind and tide;' and it further sets forth that as the inventor could not at that time 'safely discover the nature of his invention,' he was afterwards to enrol a description of the same in the High Court of Chancery.

The little publication in which Hulls attempted to make his scheme known to the world was printed in London in 1737. It is entitled, *A Description and Draught of a new-invented Machine for carrying Vessels or Ships out of or into any Harbour, Port, or River against Wind and Tide or in a Calm*. In his preface he says: 'There is one great hardship lies too commonly upon those who propose to advance some new though useful scheme for the public benefit. The world abounding more in rash censure than in a candid and unprejudiced estimation of things, if a person does not answer their expectation in every point, instead of friendly treatment for his good intentions, he too often meets with ridicule and contempt. But I hope this will not be my case, but that they will form a judgment of my present undertaking only from trial. If it should be said that I have filled this tract with things that are foreign to the matter proposed, I answer: There is nothing in it but what is necessary to be understood by those who desire to know the nature of that machine which I now offer to the world, and I hope that, through the blessing of God, it may prove serviceable to my country.'

The first, and indeed the larger portion of the pamphlet is devoted to the elucidation of such mechanical powers and principles as the inventor considered necessary to the proper understanding of his scheme. The author then proceeds to describe the machine itself, and in doing this he has the assistance of a large copper-plate engraving, which serves as a frontispiece to the work.

In a work like the present, it would scarcely be fitting to enter upon any detailed account of the mechanical contrivances by which Hulls proposed to obtain and utilise motive-power for the propulsion of vessels; but a few words will suffice

to shew to what extent he had anticipated the paddle-wheel steam-vessel of our own day. 'In some convenient part of the tow-boat,' he says, 'there is placed a vessel about two-thirds full of water, with the top close shut; this vessel being kept boiling, rarefies the water into steam; this steam being conveyed through a large pipe into a cylindrical vessel, and there condensed, makes a vacuum, which causes the weight of the atmosphere to press on this vessel, and so presses down a piston that is fitted into this cylindrical vessel in the same manner as in Mr Newcomen's engine with which he raises water by fire.' The motion thus obtained was communicated to what Hulls calls a 'fan,' but which the illustration shews to have been neither more nor less than a veritable paddle-wheel.

In speaking of his invention and the uses that may probably be made of it, Hulls is modest even to timidity. Fearing the objection, that it cannot be made strong enough to bear exposure to the full violence of the wind and waves, he does not dare to anticipate that it can ever be applied to sea-going vessels, but limits its application to tow-boats specially devoted to the purpose—in modern nomenclature, to steam-tugs; and even in these he places his paddle-wheel at the stern of the vessel, as being the least exposed situation.

Towards the close of his book, Hulls refutes various objections which either had been, or which might have been made against his project; such as, whether it be possible to construct machinery of sufficient strength to overcome the resistance of ships of great burden? whether the machine can be worked with profit? &c. In conclusion, he says: 'Thus I have endeavoured to give a clear and satisfactory account of my new-invented machine, and I doubt not but whoever shall give himself the trouble to peruse this essay will be so candid as to excuse or overlook any imperfections in the diction or manner of writing, considering the hand it comes from, if what I have imagined may only appear as plain to others as it has done to me, namely, that the scheme I now offer is practicable, and if encouraged, will be useful.'

At the time of its publication, this pamphlet appears to have attracted no attention whatever, and Freeman, unwilling to risk any further outlay, abandoned Hulls and his project. It is therefore evident that the invention did not receive a practical trial, and whatever hopes the projector might have based upon its success were destined to be disappointed.

It is not till 1750 that we have any further documentary evidence with regard to Hulls or his doings, but in that year we find him in conjunction with two townsmen of Campden, R. Darby and William Bradford, schoolmaster, publishing a *Maltmaker's Guide*, shewing how any person may know the duty on any quantity of malt in cistern, conch, or floor. Again, in 1754, we see him making a final effort to bring some of the fruits of his inventive genius into notice. With the same two friends as partners in the undertaking, he now patented a Statical and Hydrostatical Balance, and a New Sliding Rule for artificers, and published pamphlets describing these inventions. The balance is exceedingly ingenious. Hulls defines it as 'an instrument for detecting frauds by counterfeit gold, which gives the weight and shews the alloy of that metal in coin and all utensils made thereof,

and if adulterated, the nature and extent of the alloy.' One of these balances, made by Hulls, is in the possession of the writer. The pamphlet describing the sliding rule bears as its title, *The new Art of Measuring, made easy by the help of a new Sliding Rule*. Coventry: Printed by T. Brooks in Broad-gate, 1754.

Commercially speaking, these last, like all the other ventures of Jonathan Hulls, proved to be complete failures. Incurring some derision for his want of success, he quitted the place where he was best known, and hid himself among the crowds of London. With what might be called a broken heart, he died in extreme poverty, the exact date of his decease being unknown. Down to comparatively recent times, the family of Jonathan Hulls continued to live at Campden, and to hold much the same position as that occupied by himself; namely, that of upright and respectable mechanics. The cottage in which he lived at Broad Campden was long retained by them, and has only recently been pulled down. It was not till the death of the widow of the last descendant of the inventor, in 1865, that the name Hulls disappeared from the district.

Jonathan Hulls is seen to have been a man of no ordinary capacity. We cannot coincide with Barrow in saying he 'was the real inventor of the steam-boat.' But he, undoubtedly, in a rough way, was the first to point out how steam might be employed in the propulsion of vessels. His scheme was clever, but it was purely speculative. From unfortunate circumstances, it did not receive any practical trial, and, like many other efforts of genius, came to nothing. Nevertheless, let us do all honour to the memory of this poor man. His ill fortune may partly be traced to an extreme modesty, which, both in himself and his descendants, negatived the power of superior abilities so far as regarded rising in the world, but still more to his poverty and want of friends. Had he met with a coadjutor possessing the practical talents and ample capital of Matthew Boulton, there appears no reason why his life should have produced less immediate results than that of James Watt. Of the ultimate value of his idea, when, seventy years later, it was developed by men more happily circumstanced, it is unnecessary to speak.

WALTER'S WORD.

CHAPTER XXXIX.—SIR REGINALD TAKES HIS OWN VIEW.

As Walter descended the mountain, accompanied by Santoro, his reflections did not permit him to pay much attention to the incidents of the way: when they had to let themselves down some precipice, his foot and hand indeed obeyed his will; and when, now and then, his companion bade him listen, in fear that they were approaching the troops, who would certainly have shot them both, without waiting for an explanation, he stopped and listened mechanically; but for the most part his own thoughts preoccupied him, and he only knew, or cared to know, that the direction in which he was advancing with such rapid strides was towards Palermo. The sense of sudden freedom did not occur to him with the force it had done when standing with Joanna in front of the cavern; for he was

even less free now than he had been then; but the question, whether he should have his freedom eventually, agitated his mind perpetually. How many of us, in supreme moments—those of dangerous illness of ourselves or of others; or when prosperity or poverty is trembling in the balance; or when we await 'Yes' or 'No' from lips we love—have said to ourselves: 'How will it be with me to-morrow; or the next hour; or when I shall presently return out of that door?' And so it was with Walter, as, free of limb, but a slave to his plighted word, he descended that Sicilian hill-side. 'How will it be with me four days hence, when I shall have to return yonder, laden with the gold that will be the price of our freedom, or empty-handed, and therefore doomed to death amid unspeakable torments?' Nor was it egotism—though egotism would, under such circumstances, have been very pardonable—that moved the young man to these considerations. Life was dear to him, no doubt, as it is dear to most of us at five-and-twenty, but there were dearer things than life concerned with that alternative which he was considering. If, for example, he should not obtain the ransom, the cause of his failure would in all probability be what Joanna had suggested—namely, the inability of Lilian to prosecute the matter. She might have been too ill even to speak of it, or to place the authorisation in Sir Reginald's hands, on her arrival in Palermo; she might be delirious, and up to this hour have remembered nothing of the charge confided to her; or she might be dead. A cold stone seemed to take the place of Walter's heart, as this last idea occurred to him. If she was dead, what mattered it how it should be with him next week, or any week! He would die too, and thereby avoid breaking his word, for he had said: 'I will return if I am alive.' No; that would be only keeping his promise to the ear: he must live on, for the sake of the poor old man he had just left among those merciless wretches; must do his best for his enfranchisement, or comfort him by his presence in his miserable fate; for would not Lilian have had it so.

'Stop, signor; there go the soldiers,' said Santoro; and on the road which had last come into view before them, could be seen through the trees a considerable body of troops moving towards the city.

'The cordon must be loosening,' observed Santoro, 'unless these men have been relieved. Now is the time to get money up to the camp, if we could only know where it was.'

This was clear enough; and Walter was for pushing on at increased speed; but Santoro bade him pause, lest there should be more soldiers returning home, and they should find themselves between two detachments. The wisdom of this advice was made evident within the next quarter of an hour by the appearance of another body of men almost as large as that which had preceded it.

'The troops have been recalled,' murmured Santoro triumphantly. 'The governor has grown tired of hunting us with the troops, and the road for the ransom is now clear.'

'Let us hope so,' answered Walter fervently; 'but is it not possible that they have intercepted it?'

It was not unusual in similar cases for the government to direct its division among the troops; for though it made feeble efforts to put down the brigands, it was high-handed enough in its measures respecting the illegal payment of the ransoms of their victims.

'No, no; the soldiers would have talked and sung as they went by, had they had any success. Take my word for it, they have given up the whole thing, and have gone home in disgust.'

At all events, Walter and his companion met with no further hindrance, and reached Palermo before dusk. Santoro, it was agreed, should not enter the city in his company, lest his connection with the brigands—though, having divested himself of his arms and jewels, he looked as 'indifferent honest' as any other of his fellow-countrymen—should be taken for granted; and the gate of the English burial-ground having been fixed upon as a place of rendezvous every evening, in case they should wish to communicate with one another, for the present they parted; Santoro, in the highest spirits at the prospect of a few days of town-life, directing his steps to some friends in the neighbourhood of the Dogana, and Walter to the hotel upon the Marina at which Sir Reginald had lodged, and to which he did not doubt that Lilian would have been carried. He had some hesitation as to whether he should ask to see her, or the baronet; but on consideration of the importance of the matter at stake, which seemed to override all ordinary and conventional rules, he determined on presenting himself to Lilian. But, in the first place, it was absolutely necessary that he should seek his own lodgings on the Marina. Unshaven, unwashed, ragged, and scorched with the sun, he looked more like a native beggar than the young English gentleman who had embarked in pursuit of the *Sylphide* some fifteen days ago. Baccari, who was standing at his house door, did not even move aside as he approached, but regarded him with no very favourable expression.

'I have nothing for you, nor such as you,' said he, anticipating from this able-bodied but dilapidated stranger an application for alms.

'What! Baccari, has a fortnight's stay with Captain Corrali, then, so altered your old lodger?'

In a moment, the honest little fellow had thrown himself about Walter's neck, and was weeping tears of joy.

'Thanks be to Heaven and all the saints,' cried he, 'that you have returned alive! Come in, come in! What a spectacle do I behold! Nothing has happened like it since my neighbour Loffredo's case. O the villains, the scoundrels! Welcome home!—A bath? Of course you desire a bath. I recognise you for an Englishman by that request, though, otherwise, you might be a countryman of my own—and, by Santa Rosalia, not one of the most respectable. You must be half-starved, my dear young sir; still, you are alive, and have come back again from that den of thieves. How delighted Francisco will be! The poor youth has never been himself since you left him, in spite of his good advice, and fell into the hands of those ruffians. Signor Pelter, too, I shall not now have to write to him to say: "Our friend has been put to death by brigands." While supplying his

guest with food and everything needful, the good lodging-house keeper did not, in fact, for a moment cease expressing his thanks to Providence, and his congratulations on Walter's safe return. For the time, such genuine manifestations of good-will, succeeding to such hard conditions of life as those to which he had been of late accustomed, quite won the young painter from his despondency, and almost convinced him that he had really regained home and safety. But no sooner had he recruited his strength, and attired himself in a decent garb, than the responsibilities of his mission began to press upon him. Indeed, more than once had an inquiry concerning Lillian been upon his lips, which, nevertheless, he had not the courage to frame. At last, he turned round boldly to his host. 'And now,' said he, 'tell me about the English lady whom Corrali caused to be sent back to Palermo. Since her father is still in his hands, I am come hither to effect the payment of his ransom.'

'Ah! the ransom. Well, yesterday, I should have said you would have had but a bad chance, even supposing, as I do not doubt, that you have the means of raising the money. The governor, you see, is very indignant at the outrage, since it has happened to a rich Englishman, and not to a poor devil of a fellow-countryman like myself. Sir Reginald, too, and the British consul have been very importunate with him. Half the troops in the city have, therefore, been sent out to hunt the brigands, with strict orders, also, you may be sure, to let no money-bags pass through their lines. But to-day, as I hear, the soldiers have been recalled, since Corrali and his men have taken their departure towards Messina.'

'But the young lady—Mr Brown's daughter—you tell me nothing of her.'

'Well, indeed, my dear young sir, there is but little to tell; no one has seen her, since she was brought home to the hotel yonder, more dead than alive, except her sister and Julia.'

'Who is Julia?'

'Oh! that is the waiting-maid whose services have been secured for her, and about whom my son Francisco will tell you a great deal more than I can. I am very much afraid that the boy will marry her; and then there will be a family to keep by fishing, I suppose, and the little I can afford to contribute. They will want the house, too, for the children, and I shall be no longer enabled to let lodgings.'

'For Heaven's sake, tell me about the young lady! Is she worse or better? Is she in danger?'

'I don't know about danger, but she is still very ill, I believe, and, unfortunately, wandering in her mind. The sun, it seems, was too much for her during that noontide journey, and she was ill before. My good sir, where are you going? It is out of the question that she should be able to see you.'

'Then I must see Sir Reginald,' said Walter decisively; 'it is upon a matter that does not admit of a moment's delay.' Upon the whole, he thought it wise not to communicate to the talkative Sicilian what the matter really was; if the authorities had really opposed themselves to the money being paid, the more secretly the affair was managed the better.

'Well, if it is about milord's freedom and the ransom,' observed Baccari with an aggrieved air,

'you may consider that as a public topic. Every one is talking about it: some say one thing indeed, and some another, but I can tell you this much—who have, unfortunately, had some experience in these matters—that, hitherto, Sir Reginald and the rest of them have been going the wrong way to work to procure your countryman's freedom; and not only the wrong way, but the very way to prevent it. Let the gold be put in a box—the money must be paid in gold, of course—and let it be carried out at night up to Corrali's camp; then milord will come down in the morning, a little thinner, perhaps, and by no means pleased with our Sicilian ways (none of Corrali's captives are); but, after all, there will have been no harm done. Whereas, to send troops after these gentry is the way to make them flit—flit like cloud-shadows, from hillside to hillside, take their prisoner with them, until one day they get tired of carrying him about, and cut his throat.'

'That is precisely my own view of the matter,' answered Walter thoughtfully.

'Just so; and you have had a personal experience. Up to this moment, you will bear me witness, my dear young sir, that I have not put one question to you; though I have been hungering to learn your adventures almost as much as you were for your dinner. How did you fare? How did you sleep? Were there more than fifty of those scoundrels? (for that is what is reported). Did you see Joanna, who is dressed as a man?'

'My dear Baccari, I will tell you all that another time, but, for the present, I have not a moment at my own disposal.'

And Walter took up his hat, and turned his steps to the hotel, which was but a few paces off. The brief exhilaration caused by good food and clean raiment—and by the latter scarcely less than the former—had now passed away, and his mind was full of forebodings. If he should be really unable to gain speech with Lillian, it would be difficult, he knew, to persuade Sir Reginald to change any course of action which he had once seen proper to adopt—difficult under any conditions; but now that they had ceased to be friends—not to say had become enemies—it was a task of which he well-nigh despaired. It was true there were other strings to his bow—the bankers, the consul, to be applied to, with whom, surely, his late experience, and the conviction that was borne of it, must needs have weight. But even his own impressions—notwithstanding that he felt himself as much tied and bound by his promise to the brigand chief as ever—were far different, now that he was free and among friends, than what they had been when in captivity; and he was well aware that it would not be easy to convince men who were living at home at ease, of the desperate condition in which himself and the old merchant really stood. On arriving at the hotel, therefore, notwithstanding that such a proceeding might of itself enrage Sir Reginald against him, he asked to see Miss Lillian Brown. The porter, however, accustomed to continual inquiries upon the part of the British residents after her health, misunderstood his words, and replied that the young lady's condition was slightly improving, but that she had not yet recovered her senses. This was as bad as anything Walter could have expected, and of course put a stop to any idea of a personal interview.

'I wish to see her brother-in-law, Sir Reginald Selwyn,' observed he, 'upon business of great importance.'

'Very good, sir. This way, if you please.'

As Walter followed the man up-stairs, the terrible thought invaded his mind, that perhaps this poor girl had not been in her right mind since her arrival; that nothing had been done with respect to the authorisation, and that everything connected with the ransom would have to begin *de novo*. If the bankers in Palermo were as dilatory as the rest of their fellow-countrymen in matters of business, the time before him was short indeed. Walter was ushered into a sitting-room upon the first-floor, and requested to wait, while his name was sent up to the baronet.

'It is unnecessary to give my name,' said he, after a moment's reflection; 'you may say an old acquaintance from England.'

It was just possible, he thought, that Sir Reginald might decline to see his quondam friend, after what had happened at their last meeting at Willowbank; and, moreover, he wished to judge, from the baronet's countenance, whether his presence in Palermo took him by surprise or not; since, if it did, it would be proof that Lillian had never been in a condition to relate to him what had taken place during her captivity. It was nearly a quarter of an hour before Sir Reginald made his appearance, expecting, doubtless, to see some casual London acquaintance, who, finding him at Palermo, had dropped in for an evening call.

His countenance changed, directly he set eyes on Walter; he did not, however, seem so much surprised, as annoyed and disappointed: his look of conventional welcome at once gave place to one of dislike and suspicion.

'This is an unexpected pleasure, Mr Litton,' said he coldly, and pointing to a chair.

Walter sat down. Such a reception was almost an insult, but the circumstances were too serious to admit of his taking offence.

'You knew I was in Palermo, Sir Reginald, or at least that I had been so, I conclude?'

The baronet hesitated: 'Yes; I have heard so.'

'And also that I had been taken prisoner by the brigands, in company with your father-in-law, who is still, unhappily, in their hands?'

'I did not hear that you were in his company when taken prisoner; indeed, I had reason to suppose that such would hardly have been the case.'

This allusion to the merchant's quarrel with Walter, fomented as it had been by the speaker himself, and indeed solely attributable to him, was almost too much for Walter's patience; still he kept his temper.

'I was made captive, Sir Reginald, as you say, not in Mr Brown's company, but in the attempt to give the alarm while there was yet time; I hoped to effect his release by force of arms. That time is unfortunately past; and it is my painful duty to inform you, that if immediate steps are not taken to pay his ransom, his life will without doubt be forfeited.'

'That is what Captain Corrali says, I suppose,' observed Sir Reginald contemptuously.

'He has said so, and, in such a matter, he will, without doubt, keep his word. If, within four days, the whole three hundred thousand ducats are not in his hands'—

'Why, that is fifty thousand pounds!' interrupted Sir Reginald: 'a modest sum, truly, to be asked for by a highwayman.'

'But is it possible that I am telling you this for the first time?' exclaimed Walter, feeling that his worst fears were indeed realised. 'Did not Miss Lillian tell you with what mission she was charged?'

'My sister-in-law was brought to the city in a dangerous and almost desperate condition, quite unfit to attend to any matters of business.'

'Business! But this is an affair that concerns her father's life. Do you mean to tell me that she never gave you the authorisation for the payment of the money, which I saw Mr Brown write out with his own hand?'

'I have seen no such document, nor is any such in Miss Brown's possession,' answered the baronet steadily. 'As to the enormous sum you have mentioned, it is true that she has spoken of it more than once, but it was very naturally taken as the utterance of a disordered intellect. She has been wandering in her mind—as well as prostrated by fever—ever since her return.'

'The sum is perfectly correct, Sir Reginald, and not a ducat less will be taken by the brigand chief. It is the price of Mr Brown's life—and of my life also (though I do not wish to speak of that), since I have promised to return either with or without it within four days. We are both dead men, if'—

'Excuse me, Mr Litton,' said Sir Reginald, smiling, 'if I recommend that you should take some rest and refreshment before you speak any more on the topic. It evidently excites you, and if, as I conclude, you have just escaped from these scoundrels' hands, you are hardly fit to judge of them dispassionately. You are naturally disposed to exaggerate their power and determination, and to give them—or rather to persuade others to give them—whatever they choose to ask.'

'Sir Reginald, I am as cool and collected as yourself; I have told you nothing which is not true, except that it is not the whole truth. Your father-in-law will be put to death—of that I am satisfied—in some most cruel and shocking fashion, if you turn a deaf ear to what I say. Ask any one in Palermo who is acquainted with the brigand customs in such cases, and I am confident they will bear me out in what I say.'

'I scarcely think you are quite aware of what you say, Mr Litton,' answered the other, in a cold calm voice: 'you just expressed your resolve to return in person to these gentry, in order that you yourself may be put to death. You are a little eccentric in your conduct (if you will permit me to say so) even now, but you would, in that case, be stark staring mad.'

'I know that many people think it madness to keep their word, when it happens to be to their disadvantage,' answered Walter quietly; 'but that is beside the question. I am pleading for your father-in-law, not for myself. And I must insist, in his name, and for his life's sake, that an immediate search be made for the authorisation of which I have spoken.'

There was a short pause, during which the baronet frowned heavily and bit his lip, as though in doubt. 'The word "insist" is one which is utterly out of place in this discussion,' observed he presently; 'but I make allowance for your

excited condition, which, indeed, the circumstances of the case may well excuse. Moreover, I should be loath, for old acquaintance' sake, to refuse you satisfaction in so simple a matter.' Here he rang the bell, and bade the servant request the presence of Lady Selwyn. 'My wife,' said he, 'who is in constant attendance on her sister, shall at once make search for the paper of which you speak. I conclude you will trust to her report, if not to mine.'

'Trust, Sir Reginald!' echoed Walter excitedly. 'Do you suppose, then, that I think you capable of having ignored this authorisation, or of concealing it? Why, if you knew of it, and yet kept it back, you would be a murderer—ay, just as much the assassin of your wife's father!'

'Here is my wife,' broke in Sir Reginald. 'Pray, keep this extravagant talk of yours, Mr Litton, somewhat within bounds, or at least reserve it for male ears.' He spoke with sharpness as well as scorn, but Walter heeded him not; his whole attention was riveted by the appearance of Lotty, who was standing pale and trembling at the open door. She had evidently heard his words, and was looking at her husband with inquiring yet frightened eyes. 'A murderer!' she murmured—'an assassin!'

'Yes; those were the words this gentleman used, and which he applied to me, madam,' said the baronet scornfully. 'Does it appear to you that I look like one or the other?'

'But what does he mean, Reginald?'

'Gad, madam, that is more than I can tell you. He has been raving here these twenty minutes about his friends the brigands, who have sent him, it seems, for a trifle of fifty thousand pounds, as the price of your father's release.'

'As the price of his life, Lady Selwyn!' answered Walter solemnly. 'He wrote out an order on the bankers for that sum, and sent it by your sister's hand; but Sir Reginald tells me it has not been found. I adjure you, if your father's existence is dear to you, to discover what has become of it.'

'Indeed, Mr Litton, I will do my best,' said Lotty, with a glance at her husband, such as those animals who have been trained to do things contrary to their nature always throw at their master before commencing a performance. 'My sister is very ill!'

'He knows all that,' interrupted Sir Reginald hastily. 'She is much too ill, of course, to be interrogated on any such matter. But, if the authorisation—this document Mr Litton speaks of—was confided to Lilian, it must, of course, be still in her possession.—I don't say that I would act upon it, mind, even if it was found, sir,' added he, as his wife left the room; 'my idea is, that one should never treat with these scoundrels save sword in hand; that we should give them lead and steel—not gold.'

'Nay, Sir Reginald; I am sure if you were to read your father-in-law's words, written as they were in the dire expectation of death, these scruples would weigh as nothing.'

'Well, well, we shall see. I need not trouble you to wait; but in case of Lady Selwyn's finding this document, I will send word of the fact to your address, if you will furnish me with it.'

Sir Reginald took out his tablets, and wrote down the number of Mr Baccari's house, like any other trifling memorandum.

His coolness seemed frightful to Walter.

'And if the document is *not* found, Sir Reginald?'

'Well, really, in that case, I cannot see what is to be done, more than has been already done. The troops were promptly sent out, and in considerable force!'

'They would have been useless in any case,' put in Walter earnestly; 'but, as it happens, they have been withdrawn!'

'Indeed! I had not heard of that,' returned the other quickly.

'It matters not. I repeat, that all armed intervention would be useless.'

'You must really allow others, as well as yourself, Mr Litton, to exercise some judgment in this affair. The British consul, the governor of the town, and the humble individual who has the honour to address you, are all of one opinion, and it is diametrically opposed to your own. As to the other matter, you shall be communicated with, if the necessity arises. Good-morning to you.'

Walter rose, and left the room without a word. He could not trust himself to speak more with this man, who treated the capture and death of a fellow-creature—not to mention that he was a near connection of his own—with such philosophic indifference. He could not imagine that he had utterly failed to convince Sir Reginald of the peril of his father-in-law's position. On the contrary, a dreadful suspicion had taken possession of him, that the baronet was well aware of it, and had his own reasons for affecting to ignore it. Why should it have entered into his mind that he (Walter) would not believe his report concerning the existence of the authorisation, unless he had been conscious of a wish—perhaps of an intention—that it should not be found? If Lilian, who was said to be seriously ill, were to die, the whole of her father's wealth, should he be put to death by the brigands, would revert to Sir Reginald, through Lotty. The perspiration stood upon Walter's brow, at the contemplation of such wickedness as these ideas suggested, but yet they remained with him; he did not, as of old, repent of having entertained such evil thoughts of his former friend; he felt that Selwyn was a selfish, heartless fellow from skin to skin. Moreover, the look of suspicion, as well as dread, that his wife had cast upon him, when Walter had said that he who would keep back the document would be almost as guilty as Corrali himself, had not been lost upon him; it seemed to imply, not, indeed, that Sir Reginald had done such a thing, but that the person who knew him best conceived it possible that he might be capable of doing it. These thoughts crowded upon him as he sat alone in his little chamber waiting for news from this man; there was no relief to them, unless the picture of Lilian wasted to a shadow, as he had seen her last, but with her beautiful eyes lacking the light of reason, could be called a relief. When an hour had thus passed by, he could bear it no longer; inaction had become intolerable to him, and he once more bent his steps towards the hotel. His impurity seemed to have been anticipated, for no sooner had he again inquired for Sir Reginald, than he was informed that the baronet had stepped out, but had left a message to the effect that 'he had nothing further to communicate to Mr Litton.' As he left the door, the gun at the observatory

announced to the townsfolk sunset—to him, that one day of the allotted four he had yet to live had expired.

CHAPTER XL.—A GLEAM OF HOPE.

It was too late that night to call upon the consul or the bankers, on whom, indeed, his mind misgave him it would be of small use to call in any case; but a sudden impulse caused him to seek the gate of the English burial-ground. Even if Santoro were there, he could obviously afford him no assistance; and it was to the last degree improbable that he should be there, on that first evening of their arrival, and when he might naturally conclude that the young Englishman would have no need to see him. Yet he went on the bare chance of his being there. His heart seemed to yearn for the one companion with whom, if he had no sympathy, he had at least something in common, who shared with him that knowledge of his own perilous position which it seemed impossible to induce any one else in Palermo to share. The broker's man who sits in possession of the poor man's goods may not take pity upon him, but he knows the sad fact of the position, and is so far preferable to the friend who ignores his ruin, or disbelieves it, and would fain have him shout and sing.

Finding Santoro at the spot agreed upon—'Why, you could hardly have expected to see me so soon?' said he.

'I did not expect it, signor; but I had my orders not to lose a chance of communicating with you.'

'Indeed! It struck me that the captain did not trouble himself much about the matter.'

'It was not the captain; it was la signora,' answered the other significantly.

Walter felt the colour come into his cheeks, as he replied as carelessly as he could: 'But you are not one of la signora's men; I understood that only those two who came up from the cavern were under her directions.'

'That is so, signor; but one that is dear to her is very dear to me.'

'Ah! Lavocca?'

'Yes, signor. So I would go through fire and water to serve her,' answered he simply.—'Have you any news?'

'Bad news. It is that I wished to see you about. The authorisation which Mr Brown sent for the payment of the ransom is not to be found. Are you sure that no one could have possessed himself of it, while the English lady was being brought back?'

Santoro shook his head. 'That is impossible. In the first place, it would have benefited no one; and in the second, no one would have dared.'

'That is also my opinion. But, at all events, it has disappeared, and without it, I fear not a ducat can be raised. My idea is, that you should return at once to the camp, and bring back another order from Mr Brown.'

'But that would be very dangerous, signor.'

'How so, when the troops have been withdrawn?'

'Oh, the troops are nothing; it is Corrali himself that I should fear to meet. It is contrary to his wishes that we came down here: his patience is already exhausted, and he would not believe one word of such a tale as this. My return, I feel confident, would be the signal for putting milord

to death at once. You don't know the captain's temper, signor. And then there is Corbara to egg him on. Of course, I will go, if such is your wish, but that is my conviction.'

In vain Walter attempted to move Santoro from this opinion, delivered with all the gravity of a judge *in banco*. It was certain that he was in the best position to speak positively upon such a matter; and he had no motive for misrepresenting it. Walter felt convinced, against his will, that upon himself alone depended the success of his mission. Yet without the authorisation, how could he hope to induce the bankers to advance such a sum, or the tenth part of it? To be sure, he had Mr Brown's credentials in the paper he had given him at parting, which begged them to put confidence in the bearer, and to hasten matters as much as possible; but what was the tag of the play without the play itself. If the sum had been a thousand pounds, or even five thousand, it might easily enough have been raised, under such an urgent necessity; but fifty thousand pounds! He felt that the task he was about to undertake was almost hopeless; but yet he must needs attempt it, by whatever means he found available. He shook hands with Santoro, and returned alone to his own lodgings. Francisco met him at the door with, for him, quite extravagant signs of welcome and satisfaction.

'I never thought to see your face again, signor,' exclaimed he. 'I was right, you see, about these gentlemen of the mountains. Well, you have seen Corrali face to face, and yet escaped him with a whole skin and a whole purse. That is what no other man in Sicily can say for himself, save you and me.'

Walter did not think it worth while to deceive him; he was resolutely bent upon returning to the brigands; but he did not wish to be made out a martyr, nor even, as Sir Reginald called him, a madman, for so doing: he felt that his own opinion and that of the world, as to what was right to be done, would be at variance, and he did not wish to discuss the matter.

'Then the young lady too,' continued Francisco with quite unwonted loquacity; 'she has reason to thank her stars, for it is better to be ill in Palermo than to enjoy the best of health up yonder, and he pointed towards Mount Pellegrino, 'without a roof to one's head, and among bad company. They say that Joanna is a she-devil.'

'Then they do her a great injustice, Francisco,' answered Walter gravely. 'But how did you know that the lady had been with Joanna?'

'Oh, well, there is a friend of mine, a young woman at the hotel, who has no secrets from me, and as it so happens, she is the signora's nurse for the present.'

'But did the signora tell her, then?'

'I suppose so. Who else? Certainly she told her.'

'But Sir Reginald himself informed me that she was delirious—not capable of understanding what was said to her.'

'I believe that is so. She chatters on, poor thing—so Julia tells me—by the hour together. Can you guess one particular person whom she talks about, signor? The boy looked roguishly up in Walter's face. "Ah," I say to Julia, "when you go out of your mind, you will talk of me, as your mistress talks of Signor Litton."'

Under other circumstances, the piece of information would have had an interest for Walter absorbing enough—though, indeed, by this time, he possessed the full assurance that Lilian loved him—but there was something else that the lad had dropped which riveted his attention even more.

'Then, when the lady first came back to Palermo,' returned he anxiously, 'she was aware of all that had happened to her? It is only lately that she has lost consciousness. Is that so, Francisco?'

'I believe so. I will ask Julia, if you like, when I see her next.'

'By all means ask her. But when will you see her?'

'Perhaps to-morrow, perhaps not till the day after; it depends upon the signora's state whether she can get away or not. But the next time she shall give me all particulars: you may look upon the matter as settled.'

This information moved Walter greatly, as corroborating his worst suspicions, for, if it should turn out to be correct, it must needs follow that there was foul play on the baronet's part with respect to the concealment of the authorisation, or, at all events, of Lilian's mission. She would hardly have spoken of her imprisonment, and of Joanna, without mentioning the very purpose to effect which she had obtained her freedom.

The next morning, as soon as business hours commenced, Walter presented himself at the British consul's, and told his story, to which that official listened with attentive courtesy. Nothing, however, he said, could be done, so far as he was concerned, more than had already been done. The authorities at Palermo had acted promptly, and as duty plainly pointed out to them, in sending forth the troops; and all that he could do, if it was indeed the case that they had been withdrawn, would be to demand that they should make another attempt to compel the brigands to surrender their captive. As to the ransom, it was not to be expected that the Sicilian government would assist in its collection, or even countenance its payment. That was a matter for the consideration of Mr Brown's bankers.

All this, Walter felt to be perfectly reasonable; but what secretly galled him was, that beneath all this polite logic, he could plainly perceive a profound incredulity, not, indeed, in his story, but in the reality of Corrali's threat. It was evident that the consul had not become acclimatised, but still believed the personal safety of a British merchant to be invincible even from a brigand. That Mr Brown might be shot in a skirmish, he believed to be probable enough; but that he should be put to death in cold blood, was something out of the region of possibility. Walter congratulated himself that he had made no mention of his own peril, since he felt that his anxiety would in that case have been set down to an exaggerated sense of personal danger. At the English banker's, to which the consul was civil enough to accompany him, he was admitted to an interview with one of the members of the firm, and at once presented Mr Brown's memorandum—'Spare no expense; trust implicitly the bearer.'

'Bearer!' repeated the man of money; 'why, this is almost as bad as a blank cheque.'

Here the consul interposed with a few hurried words in Sicilian, which, though he caught their

meaning but indistinctly, made Walter flush with indignation. He perceived he was indebted to that gentleman's good offices for convincing Mr Gordon that he was really the person indicated in the document.

'You see, sir, this is a matter of business,' explained the banker; 'and when we are asked to put implicit confidence in a man, we like to be sure it is the right man. It seems unlike a man of business such as Mr Brown that he should have written such a memorandum at all.'

'If you were half-starved, and surrounded by brigands with cocked pistols, sir, you would not be so scrupulous about technicalities,' observed Walter, still a little sore at the nature of his reception.

'We are well aware of Mr Brown's misfortune, and regret it deeply,' answered the banker with stiffness; 'but still the form'—and again he looked at the slip of paper suspiciously—'is unusual.'

'It is, however, but the corollary of a document that should have been long ago in your hands, Mr Gordon—an authorisation for the payment of three hundred thousand ducats as ransom.'

'Three hundred thousand ducats!' exclaimed the banker. 'Why, that is preposterous!'

'No doubt, it appears so; yet, if one possessed the money, one would, I suppose, give it to save one's life.' And with that Walter once more told his story.

It was plain the banker was much moved, for he had lived much longer in Sicily than the consul, and therefore knew more of brigands.

'Well, it is a huge sum,' he said; 'and to raise it within so short a time, we shall require help from the other banks, which, however, will no doubt assist us in such an emergency. Mr Christopher Brown has no account with us to speak of, but his name is no doubt a good one. It will be a great risk, and yet one which, under the circumstances, it may be our duty to run.'

Walter felt as though this man were giving him new life; he had heard, and had believed, that money could not save men from death, but here was an instance to the contrary.

'However, no step can, of course, be taken in the matter without the production of the authorisation,' continued the banker.

'Alas, sir, I have told you that it cannot be found.'

'But if it is not found, Mr Litton, it must surely be plain to you that you are taking up my time to no purpose. Not that I grudge it to you, under the circumstances; but you cannot be serious in expecting us to raise a fortune upon such a security as *this*—and he held out the slip of paper between his finger and thumb, in a very hopeless manner—'for an almost total stranger.'

'Then, God help us!' said Walter.

'In what relation do you stand towards Mr Brown, young gentleman?' asked the banker, struck by the earnestness of this reply.

'I am only his friend, sir, and his fellow-sufferer.' 'But I understood that he had relatives with him.'

'He has two daughters—one of them, as I have told you, seriously, I fear dangerously ill—and a son-in-law, Sir Reginald Selwyn.'

'But surely it was his duty to have accompanied you here to-day; and once more, as it seemed to Walter, there came into the banker's face that look

of distrust with which he had first greeted the presentation of his credentials.

'Sir Reginald is not aware of my visit to you, Mr Gordon, nor even of my possession of this paper. I came straight from Mr Brown himself, who had no reason to doubt that the authorisation was in your hands.'

'Let it be searched for thoroughly, Mr Litton. If it is not found, you must perceive for yourself how utterly futile is any application to our firm.'

'Forgive me, sir, for having taken up so much of your time,' said Walter, rising; 'that I was pleading the cause of a dying man—one whose life, that is, is as good as lost if this money be not paid—must be my excuse.'

He said not a word concerning his own peril, nor, indeed, at the moment did it occupy his thoughts. The hardness, if not the villainy of Sir Reginald; the misery of Lotty; the pitiable condition of poor Lillian, unable to speak a word upon a subject so vital to her father; the old merchant's impending fate—all these things oppressed Walter's mind, and made the world by no means a place that he felt loath to quit. The despondency and despair in the young man's face touched the banker's heart.

'Search, I repeat, Mr Litton, for this authorisation,' said he more kindly, as he held out his hand; 'but if it cannot be found, still come to me again, to-morrow at latest. Indeed, we will do for you what we can.'

With which poor gleam of hope, Walter took his leave.

THE MONTH: SCIENCE AND ARTS.

THE Polar expedition sails amid a chorus of good wishes, and if these could avail, success would be certain. But the equipments of the two vessels are such that a lively hope may reasonably be entertained that the grand object of the adventurous undertaking will be achieved. No pains and no expense have been spared to provide against unfavourable contingencies; and while extending the limits of geographical discovery, and solving the question of the polar sea, the explorers will use their scientific appliances in the observation of physical phenomena, which, in those high northern latitudes, are of unusual interest. In order that the observers may know what has been done and what to do, a *Manual* has been prepared in which the several subjects of inquiry are fully set forth. When we mention that the *Instructions* have been drawn up by some of the ablest Fellows of the Royal Society, readers will understand that the claims and objects of science have been properly advocated. Instruments of a construction never seen before will be employed in physical research, and with these, explanations may be arrived at on questions which have hitherto baffled inquiry. The spectroscope and polariscope will be used in observation of the aurora and other phenomena of light; pendulum experiments will reveal somewhat more than is at present known of the true figure of the earth; and the so-called 'cosmic dust' is to be an especial subject of investigation.

If in the snow of the far remote north, hundreds of miles beyond human habitation, metallic particles are found, as in the snow of Sweden, then the theory that there is really such a thing as 'cosmic dust' may be accepted, until a better explanation shall be found.

Botany, geology, natural history generally, the rise and fall of tides, the direction of currents, together with dredging and sounding, will be equally well cared for; and ample means for recreation and amusement have been provided. In one of Parry's voyages the preparation and printing of a newspaper enlivened many an hour of the long dark winter; we learn, therefore, with satisfaction that the present expedition carries a printing-press.

The question has been asked, how, during the four months of constant daylight, are boat-parties when away from the ships to tell day from night? The answer is, by means of time-keepers constructed to shew twenty-four hours on the dial. Supposing 1—12 to be the day hours, then 13—24 will be the night hours.

We mentioned last year Mr Crookes' discovery of certain remarkable phenomena of attraction and repulsion, under the influence of radiation. Since then the investigations have been continued; and a fresh series of experiments, exhibited at meetings of the Royal Society, have furnished food for thought to minds familiar with the theories and facts of physical science. When a wheel, inclosed in a vacuum, begins to spin round as soon as a lighted candle is placed near the glass receiver, and continues to spin as long as the light continues, or spins twice as fast if there are two candles—an effect is produced which no one can as yet explain, but which is pregnant with important consequences for physical science. And when we see a small bar of pith, suspended as a scale-beam, dip down under the influence of a ray of light, are we to accept the phenomenon as an illustration of the suggestion made by speculative philosophers that light is a ponderable? In any case, the future of Mr Crookes' experiments seems full of promise.

Captain Belknap of the United States navy, who has been cruising in Japanese waters, reports that in his sounding operations, the machine invented by Sir William Thomson 'had it all its own way, and so admirable has been its working, and so accurate are its results, that it seems to be no more than due to the genius of Sir William to say, that the appliances for what may be not inaptly called the perfection of deep-sea sounding, originated with him.' We mentioned this machine in a recent *Month*, and some readers will remember that steel wire, such as is used for the strings of a pianoforte, is the sounding-line. The contrivances to control the descent, regulate friction, and mark the depth, are ingenious. 'So perfect and unmistakable are the indications at whatever depth, that a person standing in any part of the ship, and looking at the machine, can tell the moment the bottom is reached.' And not least among the advantages of the Thomson machine is the fact,

that a deep sounding can be taken with the wire in half the time required with a hempen line.

We learn from the *Proceedings* of the Institution of Mechanical Engineers, that the use of water-power instead of steam-power in engineering works and mechanical operations is on the increase. Especially in the work of riveting, the pressure of water is found advantageous; it is given without concussion, and is so certain, that boilers can now be made perfectly steam-tight. Boilers ought never to be made otherwise; for if calking is required, it is a sign of weakness and bad workmanship. The plates of a boiler should be absolutely close: calking tends to separate them, and is a bungling operation. Hence, it is satisfactory to be informed, that 'at the present time there are more than a hundred hydraulic riveting-machines in regular work in this country, each exerting a closing pressure of from twenty-five to forty tons, and putting in daily from fifteen hundred to two thousand rivets each.' Another advantage of these machines is, that they can be made portable, and set to work wherever required. A case in point is one of the bridges of the metropolitan extension of the Great Eastern Railway, where a riveting-machine put in three hundred three-quarter inch rivets per hour, and enabled one gang of hand riveters to do as much work as could have been done by six gangs without the machine, and to do it better.

It is probable that more and more applications of water-pressure to the moving of machinery and of workshop tools will be discovered. It is already employed for the flanging, bending, and corrugating of plates, and for the 'shearing,' or cutting in two, of chain cables. In this latter operation the pressure is at times two thousand pounds to the inch, and large links are cut through at one stroke without injury to the adjoining links.

In connection with the foregoing, we mention the use of machinery worked by compressed air in coal-mines. This also is on the increase: the loss by leakage is comparatively trifling; there is no inconvenient development of heat, as in the use of steam; the air that escapes improves the atmosphere of the mine; and some of the proprietors in the South Wales coal-field are so convinced of the benefits to be derived from the use of compressed air, that 'it is their intention to dispense with animal power altogether, and substitute air-engines for hauling underground.' In the Powell Duffryn collieries, there are already twenty-six compressed air hauling-engines at work, on the branch roads as well as on the main roads; and it is easy to imagine the improvement that must have taken place in the underground air by the withdrawal of the ponies and horses hitherto employed in hauling. It is intended to try whether compressed air cannot be substituted for hand-labour in driving 'headings,' and in the actual digging of coal. Apart from the avoidance of the heat of steam-boilers, there is the further benefit, that explosive gases in a mine would be largely diluted by the air which escapes with each

stroke of the machinery, and is cooled by the consequent expansion.

At a recent meeting of the Philosophical Society of Manchester, a morsel of carbon was exhibited which had been formed 'on the roof of a gas retort by the decomposition of the hydrocarbon gas by heat.' In this fact there seems nothing extraordinary; but it may be found to have some relation to nature's handiwork in the formation of graphite, the mineral substance of which black-lead pencils are made. As the exhibitor remarks, the carbon deposited in the retorts 'resembles graphite in its almost metallic lustre. Graphite always occurs in association with rocks which have been subjected to igneous action, and may have been formed by hydrocarbon gases traversing fissures or dykes while the sides were in a highly heated state, thus causing a deposit similar to that formed in gas retorts. The fact that, in the latter case, an increase of pressure causes a greatly increased amount of deposit, favours this view, as it is extremely probable that the gases existing in the earth's crust would be in a state of great tension.'

A paper on Colonial Timber Trees, in the last volume of *Transactions* of the Royal Society of Victoria, makes known a few particulars which may perhaps interest others as well as colonists. The 'blackwood' is described as valuable for furniture and indoor work, for even when green it scarcely shrinks, and 'stands splendidly.' The 'red gum' yields veneers suitable for cabinet-makers; but in the solid form is used for outdoor work, and appears to be one of the most durable of Australian woods, lasting fifteen years in posts and fences. 'All the gum timbers,' says the author of the paper, 'have one strange appearance when decaying: the wood separates across the grain, as if it had been affected by fire and charred;' a phenomenon supposed to be due to extremes of climate. Of European trees, we are told that the ash, elm, and oak thrive in the colony, and are of great use. The poplar grows luxuriantly in damp situations, and yields timber 'most useful for making barrows, wagons, and all other purposes requiring a light tough wood.' The willow, walnut, and box also adapt themselves readily to the Australian climate, as do some of our pines and firs; but the resinous nature of these last-mentioned suggests danger from fire. 'To prevent this danger,' says the author, 'I would recommend the planting of belts of poplars and willows across the pine plantations. I do not think fire would pass through them; and I am of opinion that they would not readily burn, as they are generally very full of sap and moisture. And the robust kinds of *Mesembryanthemum*, if planted among young trees, would completely cover the ground, prevent the growth of grass and scrub, and check the spread of fire.'

In the same volume, Mr Deverell, discussing the question of waves and their action on floating bodies, remarks, that the straining of a vessel in a seaway increases in proportion with the increase in her stability. This somewhat important distinction should not be forgotten in the general eagerness to produce stable ships. The greater the freedom with which a vessel rides on the waves, the less will she be strained by the action of their forces. 'It would perhaps be small consolation for a man,' continues Mr Deverell, 'to

know he had assured himself from the danger of being capsized by an extra liability to going straight down; and it may be fairly useful to apprehend the condition that a safe ship is one which partially opposes the waves, and partially evades them by obeying them.'

Our side of the globe has talked so much of late on this question that it may perhaps consent to hear a few words more from the other side. We quote, therefore: 'It is certain that very excessive steadiness will never be attained; the magnitude of ocean waves being too great in comparison with the possible size of ships to render it feasible. A wave only ten feet in height has a breadth of never less than thirty feet, so that we may easily perceive the huge effect which the force of buoyancy of such a wave must exert in shifting from one side to another, even a vessel of fifty feet beam. The largest vessel yet constructed, the *Great Eastern*, is a notable example. She follows the waves heavily in a seaway.'

We have heard also of the enormous mechanical power which the ocean offers us, but which mechanical engineers have not yet utilised. Mr Deverell concludes his paper with a passage which has a bearing on this question. 'Let us,' he says, 'take the case of a great storm-wave forty feet in height, six hundred through at the base, and conceive a volume of water contained in the section of such a wave moving with a velocity of six feet per second, or three hundred and sixty feet per minute. Or, consider an ordinary ocean-wave, sixteen feet in height, and one hundred and eighty feet at the base; and multiply the power requisite to move a section of this body of water two hundred and forty feet per minute by a thousand such, and we may form an idea of the magnitude of the energy engaged in stirring the waters. These are the giant forces which are perpetually traversing the surface of the ocean.'

Professor Rice of Connecticut has discovered that certain deadly poisons which are violent and fatal in their effects on mammals are very feeble in their action on molluscs. Four days' soaking in dilute hydrocyanic acid did not prove fatal to the mollusc selected for the trial; and another into which urari poison had been injected, seemed none the worse when examined on the following day. Carbonic acid in large quantities produced no ill effect; but chloral hydrate and cyanide of potassium are rapidly fatal. Quinine acts in the same way, but with less energy. Chloroform produces instantaneous contraction, and perhaps death: this latter point has, however, not yet been ascertained. As exemplifying the effect of poison on a 'low' form of organisation, and affording means of comparison, these experiments have some physiological value.

Professor Rutherford, in his lectures in the University of Edinburgh, says that the 'highest success of nations, as of individuals, is only to be attained by close and severe attention to the inexorable laws of physiology,' and that 'he who has the deepest grasp of physiology will certainly take the lead in unravelling the diseased state.' He points out further that in disease, nature makes experiments from which much may be learned. For instance, 'when a blood-vessel bursts on one side of the brain, and the opposite side of the body becomes palsied; when a part of the brain becomes disorganised, and the memory of words is lost;

when the portio dura nerve is paralysed, and the sense of taste disappears from the anterior part of the tongue; when an aneurism presses on the sympathetic nerve in the neck, and causes a change in size of the pupil of the eye on the same side; when a tumour compresses the gall-ducts, and prevents the escape of the bile, or the duct of the pancreas, and interferes with the passage of its juice into the digestive canal—how interesting and how important to the physiologist, as well as to the physician, are the results of all these experiments.' Professor Rutherford holds that a knowledge of physical science is essential to form a complete physiologist; but how is this to be super-added to the subjects of study already required of young men at college? It is gratifying, however, to know, that the rudiments, at least, of this important science of animal physiology are now being taught in schools.

America presented the potato to Europe centuries ago, and now threatens Europe with a beetle which will destroy that important plant. Consequently, Europe is seriously interested in the question, how to keep out the 'Colorado beetle?' If all be true that is reported, it is as difficult to keep them out as to keep out an epidemic; but if all concerned will use their best endeavour, the mischief may be averted. The president of the Entomological Society says, in his anniversary address: 'The Colorado potato-beetle is an enemy whose rapid advances towards the shores of the Atlantic are a menace to Europe. When once established on the seaboard, they may wing their way to vessels in port, being accustomed to fly in swarms, and may thus be borne over to found a colony in this country, irrespective of conveyance with the tubers themselves. Agricultural and Horticultural Societies should make provision for the dissemination of correct information respecting these insects; and specimens of the beetles themselves should be obtained for distribution, with the view to familiarise persons with their aspect, and to prevent their diffusion.' Some further information on the subject will be found in a late number of this *Journal*.

A CURIOUS POLAR BIRD.

DISCUSSIONS respecting the Arctic Expedition now in preparation have brought under notice a remarkable polar bird, which periodically leaves the extreme northern regions, and visits the south of Europe. In referring to the official papers just published concerning the expedition, a writer in the *Daily Telegraph* jocosely hints that this bird 'might perhaps tell us more about the polar regions than any other that plumes a wing. It is indeed a thousand pities that the Knot, or *Tringa Canutus* of ornithologists, could not have been invited, for lack of speech, to perch upon a chair at the meetings of the committee, especially since there is a fine specimen at the Zoological Gardens, in the Fish-house, and probably at this moment that very individual knows all about the pole. In appearance, it is between a snipe and a plover, but varies in plumage according to the season of the year. In winter, it is coloured a quiet ashen gray; in summer, its feathers assume a bright Indian red tint, although the full beauty of this change is not witnessed in confinement. The knot

is one of the best judges of climate in creation, and much quicker than a thermometer to distinguish between fine gradations of cold and heat. The sort of weather and latitude it likes best is such as England affords in April and October—bright, bracing days and nights, with sunshine and breezes, but neither of them too strong. Our winter is too harsh and unpleasant for this sagacious bird; it comes to our shores from the northward in large flocks of old and young ones, and stays until November brings the frost or fog, and then—unless the “Indian summer” be prolonged—it flies away for the Mediterranean coasts and the South, where it feeds along the sea-shores till the mornings and evenings of Algeria and Spain become no longer cool. Then—that is to say, about the end of March—vast flocks are seen returning to England, and at the same time to the Northern States in America, to Denmark, Norway, and Iceland. But they never stay—they go beyond all these countries; they fly far over Greenland and the very highest latitudes frequented by our whalers, so that while the breeding-place of all the other northern birds is known, that of the knot has never yet been reached. Nobody has taken a nest of these wandering birds, or seen one of their eggs. Naturalists can only tell that they go in summer “to the northward of all things,” in order to breed. There is force, therefore, in what the blue-book says: “We may fairly infer that the lands visited by the knot in the middle of summer are less sterile than Iceland or Greenland, or it would hardly pass over those countries, which are known to be the breeding-places of swarms of water-birds, to resort to regions worse off as regards supply of food. But the supply of food must depend chiefly on the climate. The inference necessarily is that, beyond the northern tracts already explored, there is a region which enjoys in summer a climate more genial than they possess. It would be easy to summon more instances from the same group of birds, tending to shew that beyond a zone where a rigorous winter reigns there may be a region endowed with a comparatively favourable climate. If so, surely the conditions which produce such a climate will be worth investigating.” Here, then, we see a little red bird suggesting profound problems to humanity, and if we really do find a pleasant polar land at the top of the world, Captains Nares and Markham must share the honour of that discovery with the knot.

Another writer, subsequently, in the same daily paper, disputes the assertion, that ‘nobody has taken a nest of these wandering birds, or seen one of their eggs.’ He says: ‘I think this must be an error. Yarrell, on the authority of Dr Richardson, says the knot breeds in Hudson’s Bay, and down to the fifty-fifth parallel, and that they were observed by Captain Lyon breeding on Melville Peninsula; that they lay four eggs on a tuft of withered grass without forming any nest, and he describes the colour of the eggs. Morris also, in his *Nests and Eggs of British Birds*, figures and describes the eggs, and states that the drawing on his plate was taken from a specimen forwarded by J. R. de Capel Wise, Esq., of Lincoln College, Oxford. The volume from which I take this note originally belonged to the late Mr Wheelwright of Carlstad, Sweden, and in a marginal remark on the egg, he says: “Not in the least like the eggs

of the knot that I have had from Greenland and Spitzbergen, nor does this figure at all resemble that in Blasius’s, which much resembles my eggs; in colouring, they are not unlike the snipe’s.” I myself have in my cabinet four eggs, which I have always believed to be those of the knot. It is probable that one or more of these were from Mr Wheelwright’s collection, as some others of my rarer eggs are; but as I did not purchase them myself, I am not certain, and do not wish to set myself against your authority. I merely mention what has come under my notice.’

We should be glad to have some further particulars of a trustworthy nature concerning the *Tringa Canutus*.

THE SPIRITS OF THE WIND.

WHERE is your home, ye wanderers free?
In what far land, across what sea?
Live ye in some vast cavern rude,
Some unexplored solitude?

Or dwell ye where no sound is heard,
No voice of man, or beast, or bird?
Had ye your strange mysterious birth
Beyond the narrow bound of earth?

Where ye might mingle with the flight
Of spirits from the world of light—
Bright messengers that sometimes come
From that dear land, the land of home.

All haunts are yours, all forms, all shades,
O’er moorland brown, or woodland glades;
Now toying gently with a flower,
Then rushing on with fiercest power.

Ye ring a melancholy chime,
In the sad pensive autumn-time,
O’er fading flowers that once were bright,
In the resplendent summer’s light.

And o’er the leaves with rustling sound,
Drifting so gently to the ground,
Singing o’er withered heaps and sere,
A dirge for the departing year.

In softened light of summer eve,
A gentle touch ye often leave
Upon the weary brow of pain,
That quiet ne’er may know again.

Round mansion hoar and gray with old,
Your carnival is often held,
With hollow shriek or fearful moan,
Anon, with sad mysterious groan.

Ye rush across the restless sea,
In all your wild tumultuous glee;
And stately ship and pennon fair,
Lie buried by your fury, there.

Howe’er ye come, where’er ye go,
Through joyous scenes or haunts of woe,
Ye ever do His bidding still—
Our great Creator’s sovereign will.

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